



Medium and Heavy Duty Private Delivery Vehicles: Alternative Fuel Progress and Opportunities in New York City and Nationwide

The Challenges of Private Delivery Vehicles

In 2000, there were over 7.0 million medium and heavy duty trucks registered (trucks with a gross vehicle weight over 26,000 pounds) in the U.S. (Heavy Duty Distribution Association). These vehicles have been the target of recent regulations enacted by the U.S. EPA which seek to reduce the emissions generated by the nation's medium and heavy duty vehicles. According to U.S. EPA, the new standards will require gasoline trucks to be 78 percent cleaner and diesel trucks to be more than 40 percent cleaner than today's models. In addition, the U.S. EPA is also requiring the use of cleaner diesel fuels (low sulfur diesel) that will reduce air pollution from trucks by another 90 percent by 2007.

The Opportunities for Alternative Fuels

Heavy-duty trucks travel hundreds of miles a day, delivering myriad of goods to cities all over the country. While heavy-duty trucks are essential to our commerce and to our quality of life, these high-mileage, high-fuel-use vehicles emit particulate matter, nitrogen oxide, and other greenhouse gas precursors at levels much higher than the emissions levels of light-duty vehicles. Heavy-duty fleets that sit idling expend fuel and steadily release harmful emissions into the air. Fleets that operate along fixed routes or routes with limited range make them excellent candidates for natural gas or electric delivery vehicles. In some parts of the country, LNG (liquefied natural gas) is becoming a popular fuel choice for heavy duty trucks. LNG is preferred by some fleets over CNG because it allows more fuel to be stored on board with less weight, allowing more vehicle range and operating time with comparable emission benefits.

Spotlight on New York

Delivery vehicles are omnipresent on the City's road network. According to the industry estimates, there are over 190,000 medium and heavy duty trucks operating in the New York metro area¹. Many of these vehicles operate along fixed routes or routes with limited range making them excellent candidates for natural gas or electric delivery vehicles. The City of New York Department of Transportation in partnership with NYSERDA has made CMAQ funding available through the Private Fleet program to reduce the out-of-pocket costs associated with purchases of alternative fuel delivery trucks. This program complements existing state and federal tax credits, provides grant funding to offset the incremental cost associated with vehicle acquisition.

One fleet located in the South Bronx that took advantage of this funding opportunity is Manhattan Beer Distributors. Manhattan Beer Distributors, a locally owned and operated distributor of Coors, Corona and other beverages operates a fleet of over 500 vehicles from its South Bronx/Port Morris distribution facility. In February 2002, Manhattan Beer celebrated the roll-out of the first of its heavy duty beverage delivery trucks that will operate exclusively on

¹ Ward's Automotive Yearbook, 1998

CNG. Over \$500,000 in CMAQ funding was allocated to this project in addition to approximately \$95,000 provided by the U.S. Department of Energy. Manhattan Beer's delivery trucks average about 60 miles per day in the New York City Metropolitan Area. Each vehicle, repowered from diesel to dedicated CNG, will displace about 3,000 gallons of diesel fuel each year for the next 12 years, or 540,000 gallons of diesel fuel over the lives of the 15 delivery trucks. The natural gas engines will reduce approximately 177 tons of emissions over their operating lives.

While this is the first example of a private company using CNG in heavy duty delivery vehicles in New York City, other fleets throughout the country are using both CNG and LNG in their heavy duty delivery fleets. LNG (liquefied natural gas) is preferred by some fleets over CNG because it allows more fuel to be stored on board with less weight, allowing more vehicle range and operating time with the same emission benefits. LNG has not been used in New York State due to a moratorium on the siting of LNG fueling facilities in New York State, which has prevented the development of LNG fueling facilities. While this moratorium has expired for areas outside of New York City, there has been a lack of movement to develop the LNG market in New York. If the state begins to allow the development of LNG facilities, medium and heavy duty fleet operators will have another alternative fuel choice, which could lead to the further deployment of LNG heavy duty vehicles in New York City as well.

Another fleet that is using alternative fuels in a delivery vehicle application is the U.S. Postal Service. United States Postal Service has 22 electric two-ton delivery trucks in service in Manhattan. Sponsors of this project include the Northeast Advanced Vehicle Consortium, which provided funding for the initial development of two vehicles, NYCDOT, and the New York Power Authority (NYPA), which oversaw the initial demonstration and provided co-funding for the procurement of 20 additional vehicles. These delivery trucks have a 40 mile range. Postal trucks make mostly vertical deliveries in Manhattan and travel an average of seven miles a day.

Opportunities to reduce emissions in heavily industrialized areas also exist for vehicles that cover neither fixed routes nor short distances. Last winter, the Hunts Point Cooperative Market, in partnership with Sustainable South Bronx, the New York Power Authority, and the Idle Aire Corporation, began the installation of electrification units at truck parking spaces within the Hunts Point Cooperative Market, the largest food distribution center in the world. Drivers of long-haul tractor trailers currently keep their truck and refrigerated trailer engines running for hours at a time while they rest or wait to unload at the Market. The electrification devices allow drivers to operate cab climate control systems, appliances, and refrigerated trailers, without idling engines. Two truck bay electrification units were installed during the summer of 2001, with another twenty-six scheduled to be in operation by May of 2002. At full operation, the 28 bays are expected to eliminate over 15 tons of nitrous oxides, 2,000 tons of carbon dioxide and nearly a ton of toxic particulates. The truck bay electrification units are ideal for large distribution centers that generate high volumes of diesel truck traffic. The project was funded using a \$400,000 grant from the Clean Air Communities fund.